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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,844	06/10/2005	Karim Zaghib	0055676-000020	8954

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EXAMINER
HU, HENRY S

ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
06/15/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary	Application No.	Applicant(s)	
	10/501,844	ZAGHIB ET AL.	
	Examiner	Art Unit	
	HENRY S. HU	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *RCE of April 3,2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☒ Claim(s) *1* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. USPTO has received **two** things including: (A) **RCE Request** filed on April 3, 2009 and (B) **Amendment** (after Final) filed on March 20, 2009, which are in response to Final action filed on October 22, 2008. With such an amendment after final, **Claim 1 is amened; Claims 6-35 are previously cancelled, Claims 36-60 are currently cancelled, while no new claim is added**. To be specific, parent **Claim 1** is amended in **two** ways including: (A) to add the advantage of using such a polymer electrolyte with a stability voltage higher than 4 volts, and (B) to remove the use of subcomponents b1-b8 in component b. In summary, **only the subcomponent b9 or b10 is used as component (b) so as to be together with the four-branched polymer (the component (a))**.

Examiner **accepts Applicants' six drawing sheets with Figures 1-7** (a brief description is on page **4**). **Claims 1-5** with only **one** independent claim (**Claim 1**) are now pending. An action follows.

Response to Argument

2. Applicant's argument filed on March 20, 2009 has been fully considered but they are not persuasive. The focal arguments related to the patentability will be addressed as follows: parent **Claim 1** is now further amended (three times so far) in **two** ways including: (A) to add the advantage of using such a polymer electrolyte with a stability voltage higher than 4 volts, and

(B) to remove the use of subcomponents b1-b8 in component b. In summary, **only the previous subcomponent b9 or b10 is now used as component (b) so as to be together with the four-branched polymer (the component (a))**. **All three 102/103 previous rejections are thereby converted to pure 103 rejections** with the teaching from Ba Le and Lan for adding newly setting b1 and b2 subcomponent. **Non-Final rejection is thereby applied**.

Claim Objections

3. **Claim 1 is objected to** because of the following informalities:

On **Claim 1**-(b), the disclosure for subcomponent (b2) as "**nano TiO_2 noncoated or coated with an organic material** that is ……copolymer **or with an inorganic material selected from SiO_2 and Al_2O_3**" is vague and improper. For clarification, Applicants need to confirm three types nano TiO_2 are used and also show where the claim support is. Accordingly, rewriting to "**nano TiO_2 noncoated**, **nano TiO_2 coated with an organic material** that is ……copolymer, **or nanoTiO_2 coated with an inorganic material selected from SiO_2 and Al_2O_3**" is needed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. The limitation of parent **Claim 1** (amended three times) in present invention relate to ***polymer electrolyte for an electrochemical generator***, *wherein said polymer electrolyte exhibits* ***a stability voltage higher than 4 volts*** *and comprises* ***a and b*** *as:*

(a) ***at least one four branched polymer having a hybrid termination***, *wherein at least one branch of said four branched polymer is capable of giving rise to cross-linking; with*

(b) ***at least one component*** *selected from the following families including* ***b1 and b2*** *as:*

(b1) ***SiO_2 or Al_2O_3;*** *and*

(b2) ***nano TiO_2 non-coated or coated with an organic material*** *that is compatible with a tetrafunction terminal acryloyl-modified alkylene oxide polymer, the organic material being selected from at least one* ***polyol*** *or at least one* ***polyethylene-polyoxyethylene copolymer*** ***or with an inorganic material selected from SiO_2 and Al_2O_3***.

See other limitations of dependent ***Claims 2-5***.

6. **Claims 1-5** are rejected under 35 U.S.C. 103(a) as obvious over **Kono et al. (US 6,399,254 B1 or its equivalent EP 880,189 A2)** or **Ishiko et al. (US 6,190,804 B1 or its equivalent EP 923,147 A2), each in view of Ba Le et al. (US 6,673,273 B2) and/or Lan et al. (US 6,596,803 B2)** for the reasons set forth in paragraphs **5-13** of office action dated 10-22-2008 and paragraphs **5-8** of office action dated 1-8-2008 as well as the discussion below.

7. **Claims 1-4** are rejected under 35 U.S.C. 103(a) as obvious over **Kerr et al. (US 7,101,643 B2) in view of Ba Le et al. (US 6,673,273 B2) and/or Lan et al. (US 6,596,803 B2)** for the reasons set forth in paragraphs **5-13** of office action dated 10-22-2008 and paragraphs **9-11** of office action dated 1-8-2008 as well as the discussion below.

8. **Claim 5** is rejected under 35 U.S.C. 103(a) as obvious over Kerr et al. (US 7,101,643 B2) **in view of Ba Le et al. (US 6,673,273 B2) and/or Lan et al. (US 6,596,803 B2)**, and further in view of Kono et al. (US 6,399,254 B1 or its equivalent EP 880,189 A2) or Ishiko et al. (US 6,190,804 B1 or its equivalent EP 923,147 A2) for the reasons set forth in paragraphs **5-13** of office action dated 10-22-2008 and paragraphs **13-14** of office action dated 1-8-2008 as well as the discussion below.

9. Parent **Claim 1** is now further amended (three times) in **two** ways including: (A) to add the advantage of using such a polymer electrolyte with a stability voltage higher than 4 volts, and (B) to remove the use of subcomponents b1-b8 in component b. In summary, **only the previous subcomponent b9 (now as b1) or b10 (now as b2) is used as component (b) so as to**

be together with the four-branched polymer (the component (a)). To be specific, (b1) is **SiO_2 or Al_2O_3**, while (b2) may be from three choices including: (b2-1): **nano TiO_2 non-coated**; (b2-2): **nano TiO_2 coated with an organic material** that is compatible with a tetrafunction terminal acryloyl-modified alkylene oxide polymer, the organic material being selected from at least one **polyol** or at least one **polyethylene-polyoxyethylene copolymer**; or (b2-3): **nano TiO_2 coated with an inorganic material selected from SiO_2 and Al_2O_3**.

10. In view of using narrowed down component (b) to be with component (a) such as four branched polymer having a hybrid termination, **three** primary references including **Kono, Ishiko and Kerr** in combination or alone is thereby still silent about incorporating the claimed additive such as newly setting (b1) or (b2) subcomponent. Each of **Ba Le and Lan** in combination or alone has taught such a subject matter.

For instance, see **Ba Le** at column 12, line 12-67; particularly see lines 37-42 for adding **inorganic oxide particles from silicon, aluminum or titanium** in making electrolyte compositions. See **Lan** at column 10, line 27 – column 12, line 6; particularly see line column 10, line 27-31 and column 11, line 20 and 65 for adding **inorganic oxide particles from silicon or the like** to be with polymers. By doing so, the electrolyte composition or polymer composition mixture becomes more mechanical strength and the like as known in the art. See Le at column 12, line 12-16; see Tan at column 10, line 27-41.

11. In light of the fact that all involving references are dealing with making polymer/filler mixture by carrying fundamentally the same or similar two components including component (a) and component (b), one having ordinary skill in the art would have therefore found it obvious to modify **Kono, Ishiko or Kerr**'s process of making such a composition by adding or replacing filler with the same or at least similar filler as taught by **Ba Le and Lan**. One would expect all the embodiments in the same genus (filler) would succeed based on functional equivalence and interchangeability. Additionally, more diversified and effective polymer electrolyte products may be obtained. .

12. In summary, **only the previous subcomponent b9 or b10 is now used as component (b) so as to be together with the four-branched polymer (the component (a))**. **All three 102/103 previous rejections are thereby converted to pure 103 rejections** with the teaching from Le and Tan for adding newly setting b1 and b2 subcomponent. **Non-Final rejection is thereby applied**.

Conclusion

13. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu whose telephone number is (571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Vasu Jagannathan, can be reached on (571) 272-1119. The **fax** number for the organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Peter D. Mulcahy/
Primary Examiner, Art Unit 1796

/Henry S. Hu/
Examiner, Art Unit 1796

June 5, 2009